Drought Tolerant and Nutritious Maize Seed

Peter Setimela
Objectives

Project Goal: **Increase adoption** of new DTM varieties by smallholder farmers

Objectives:

1. Sustainably increase the availability and affordability of prioritized products in target areas.
2. Enhance the uptake and use of improved DT maize in target areas.
3. Enhanced impacts through effective knowledge management.

Objective 1: Focus on private sector capacity-building

Objective 2: Focus on consumer awareness and demand creation

Objective 3: Focus on effective knowledge sharing
Major Focus

DT Seed Production
- Seed road maps
- Breeder’s, basic and certified seed production
- Production cost models
- Gender and social inclusion
- Capacity building of seed companies

Marketing & Promotion
- Stimulating demand, including on-farm demos and targeted communications
- Market analysis and marketing strategies
- Capacity building of seed companies
- M&E

Adoption by farmers
- Adoption monitoring and impact studies
- Gender and social inclusion
- Grain-market linkages
- Synergies with complementary initiatives
- Feedback loops to product devt. and delivery teams
Maize Seed Value Chain and Stakeholders Roles

**Steps**
- Product development
- Product testing
- Variety release & registration
- Product-based Seed road maps; Seed production
- Marketing & promotion
- Adoption by farmers

**Partners/Stakeholders**
- CIMMYT, NARS, Seed Companies
- CIMMYT, NARS, Private Sector
- NARS, Seed Companies; 
  *CIMMYT; NGOs*
- CIMMYT; Seed Companies; NGOs
- Seed Companies, Extension agencies; NGOs; 
  *CIMMYT*
- Agro-dealers, Seed Companies, 
  Extension agencies; NGOs; 
  *CIMMYT*

**DTMaSS Emphasis**
- No
- No
- Limited (MLN)
- Strong
- Strong
- Strong
Project Targets

- 50,000 Households
- Population: 300,000
- 2000 tons certified maize seed in target ZOIs
Prioritized Products

DT hybrid

Check hybrid
Early maturing Hybrids 2015/16 On-farm
Bio-fortified maize

Efficacy of PVA maize in Zambian children (Gannon et al. 2014)

<table>
<thead>
<tr>
<th>Carotenoid source</th>
<th>ProVA maize</th>
<th>Tangerine</th>
<th>Yellow maize</th>
<th>White maize</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 Days of feeding</td>
<td>3.49 ± 1.9</td>
<td>3.22 ± 0.4</td>
<td>2.44 ± 0.2</td>
<td>1.14 ± 0.2</td>
</tr>
<tr>
<td>50 Days of feeding</td>
<td>8.82 ± 1.0</td>
<td>3.74 ± 0.5</td>
<td>1.93 ± 0.2</td>
<td>1.55 ± 0.7</td>
</tr>
</tbody>
</table>

First wave of hybrids: 6-8 ppm PVA (2012) (Pixley et al., 2013)
Feeding Trials with QPM
Integrate new drought tolerant maize and SI Practices
Strategy to Reach Farmers

- Breeders Seed
- Foundation Seed
- Certified Seed

- CIMMYT
- Partners
- Seed companies

Farmers
New drought tolerant maize varieties have been developed which significantly outyield current varieties under farmer management.

Given the time from development to dissemination we need to ensure yields under drought conditions will be maintained in future environments.

Drought tolerant varieties alone will not necessarily translate into yield gains in farmers’ fields.
Thanks